# The Water Utility Enterprise

## Final–June 1987

Santa Clara Valley Water District

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PROPERTY OF SANTA CLARA VALLEY
WATER DISTRICT
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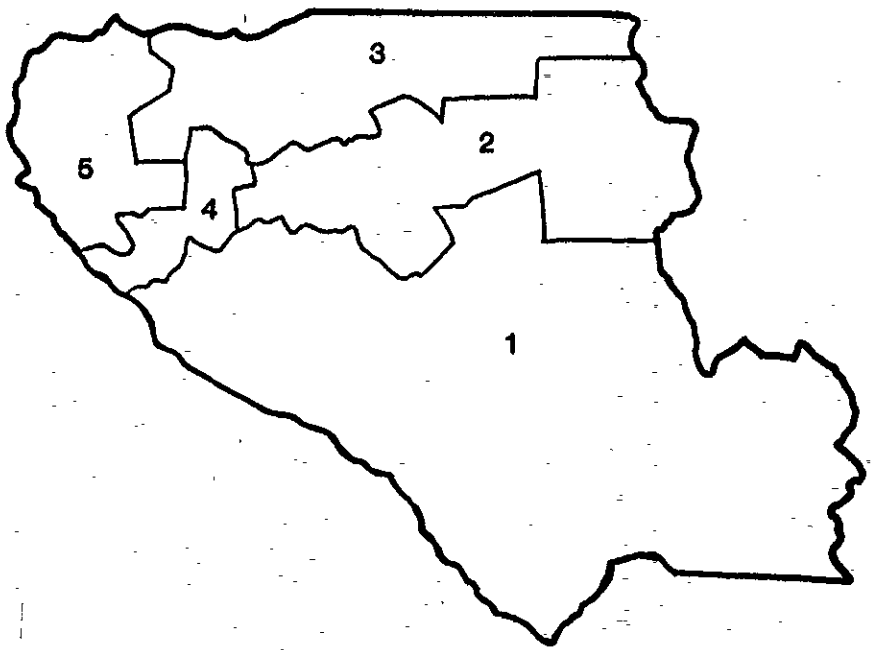
San Jose, California 95118




DIRECTORIAL DISTRICTS

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District Board of Directors

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# Santa Clara Valley Water District

5750 ALMADEN EXPRESSWAY
SAN JOSE, CALIFORNIA 95118
TELEPHONE (408) 265-2600

Board of Directors:

Although rainfall during 1985-86 was about 141% of normal, the short duration, high intensity storms limited the infiltration to the groundwater basins. However, most of the District's reservoirs were filled from above average runoff. While the 1986-87 rainfall is only 55% of normal, it is anticipated that the available local supplies combined with imported water from the State Water Project, San Felipe Division, and Hetch Hetchy Aqueduct will adequately meet the water needs of the County during 1987-88.

Construction is complete on the San Felipe Division of the Federal Central Valley Project with the exception of the control systems. The facilities have been turned over to the District for operations and maintenance. Dedication ceremonies are scheduled for August 1987.

Expansion of the In-County Distribution System continues. Snell Pipeline Phase I, Santa Teresa Water Treatment Plant, Santa Teresa Tunnel, Greystone Pipeline and Pump Station, and Santa Teresa Force Main are all under construction. The contract for Snell Pipeline Phase II has been awarded. Calero Pipeline Engineer's Report and EIR have been approved. The Engineer's Reports and EIRs have been started for Milpitas Pipeline and Mountain View Distributary.

Anderson Dam hydroelectric power generation facility is under construction, and the hydroelectric power generation facility on the Kirk and Page Turnouts from Central Pipeline is in the design stage.

The construction contract has been awarded for the Anderson Dam and Spillway modification.

The Water Utility Enterprise continues to be impacted by the District's involvement in efforts to regulate the storage of hazardous materials and to have toxic spill sites within Santa Clara County identified and cleaned up. The District's major objective -- and the basis for its involvement -- is to protect the groundwater basin from further contamination by hazardous materials and to assist other agencies in their work to reduce or eliminate existing groundwater contamination. The District has been sealing abandoned or unused wells to prevent movement of contamination through wells. District staff is being trained by the Regional Water Quality Control Board in the detection and cleanup of underground fuel tank leaks.

The District refunded existing water revenue bonds on August 22, 1986 at 6.8% interest. The refunding was for $94,935,000 and resulted in an estimated savings to the District of about $200,000 per year over 20 years.

Following meetings with the Treated Water Contractors, Retail Water Agencies, Agricultural Water Advisory Committee, and the Santa Clara Valley Water Commission, the District Board of Directors adopted water rates for 1987-88 which are shown at the end of this report. Zone W-2 groundwater charges and equivalent basic user rates for 1987-88 are $100 per acre-foot for municipal and industrial water and $25.00 per acre-foot for agricultural water. Groundwater charges and equivalent basic user rates for 1987-88 are $22.00 per acre-foot for municipal and industrial water and $5.50 per acre-foot for agricultural water in Zone W-5, which includes Zones W-6, W-3.1, W-3.2, W-3.3, and W-3.5. Staff has been registering all wells in Zone W-5 during the 1986-87 fiscal year.

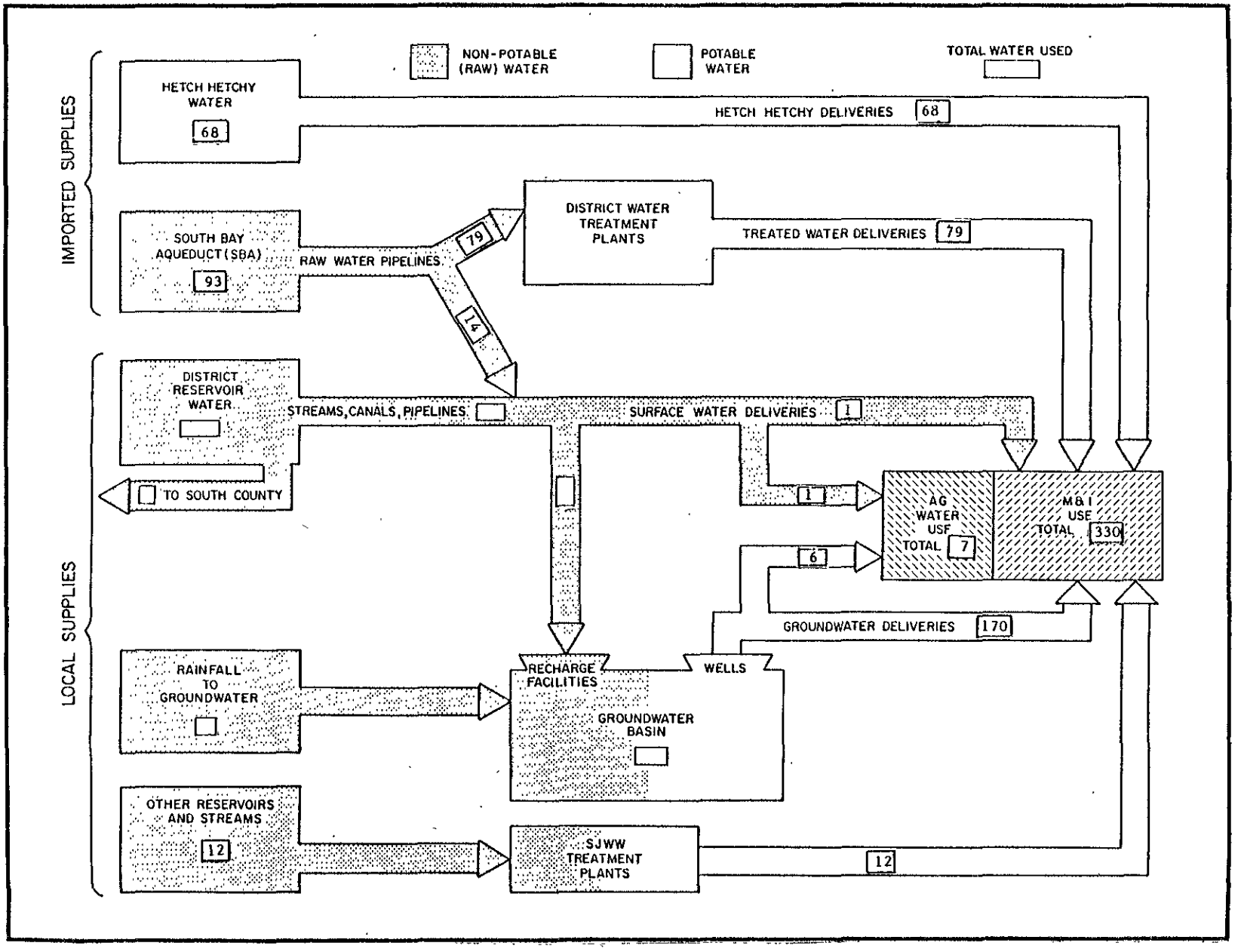
John T. O'Halloran
General Manager

# 1985-86 Water Picture ...

Rainfall in Santa Clara County during 1985-86 was about 141% of normal as a result of short but intense storms. Natural infiltration to the groundwater basins was low but the runoff filled District reservoirs for later percolation.

(The District does not have at this time all the information needed to complete the diagram at the right.)

# WATER SUPPLY AND USE
# NORTH SANTA CLARA COUNTY
1985-86*
(All values in 1,000 Acre-Feet)




*Information necessary to complete this diagram was not available at the time this report was prepared.

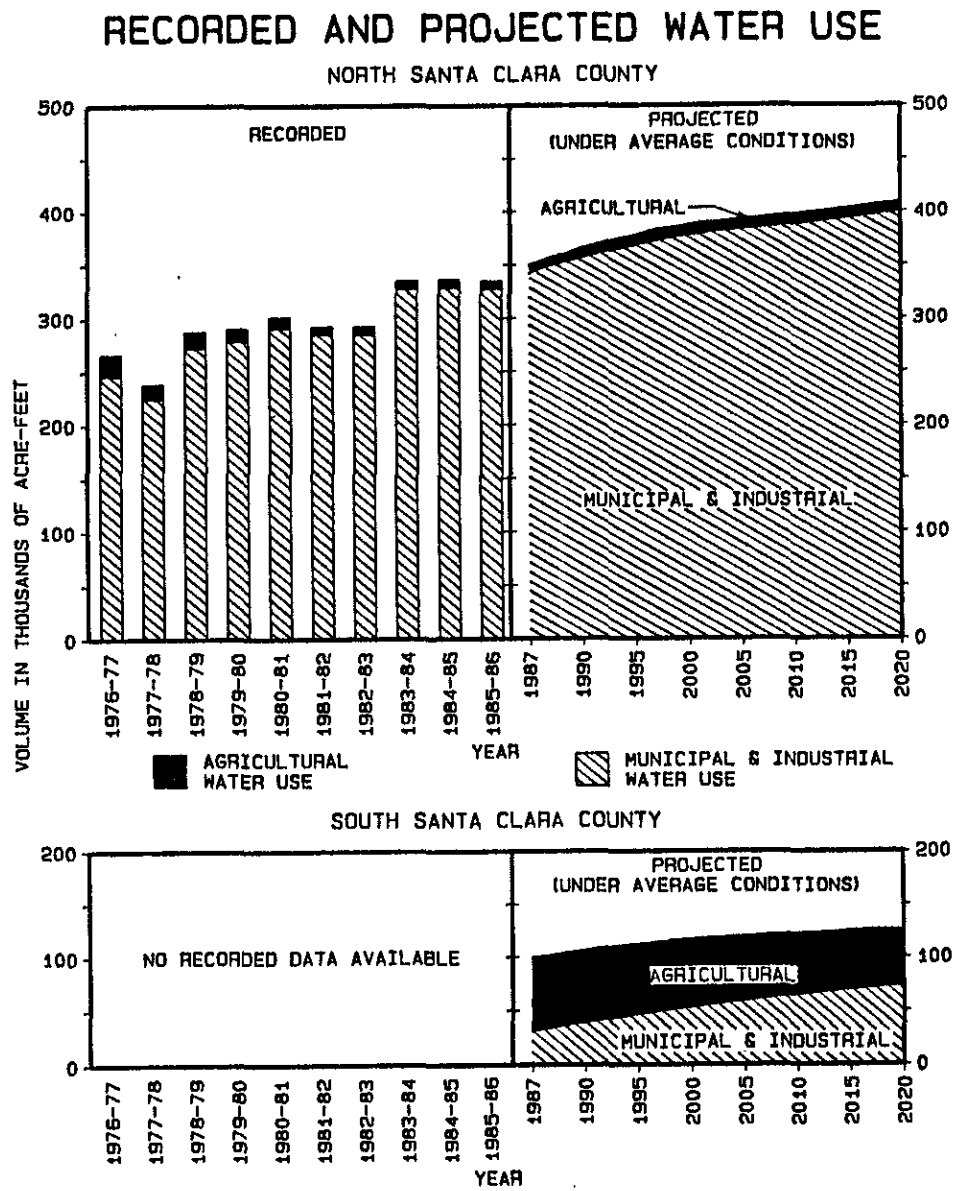
# Water Use...

Water use in Santa Clara County is categorized as either agricultural or municipal and industrial. Recorded North County water use since 1976-77 is shown to the right.

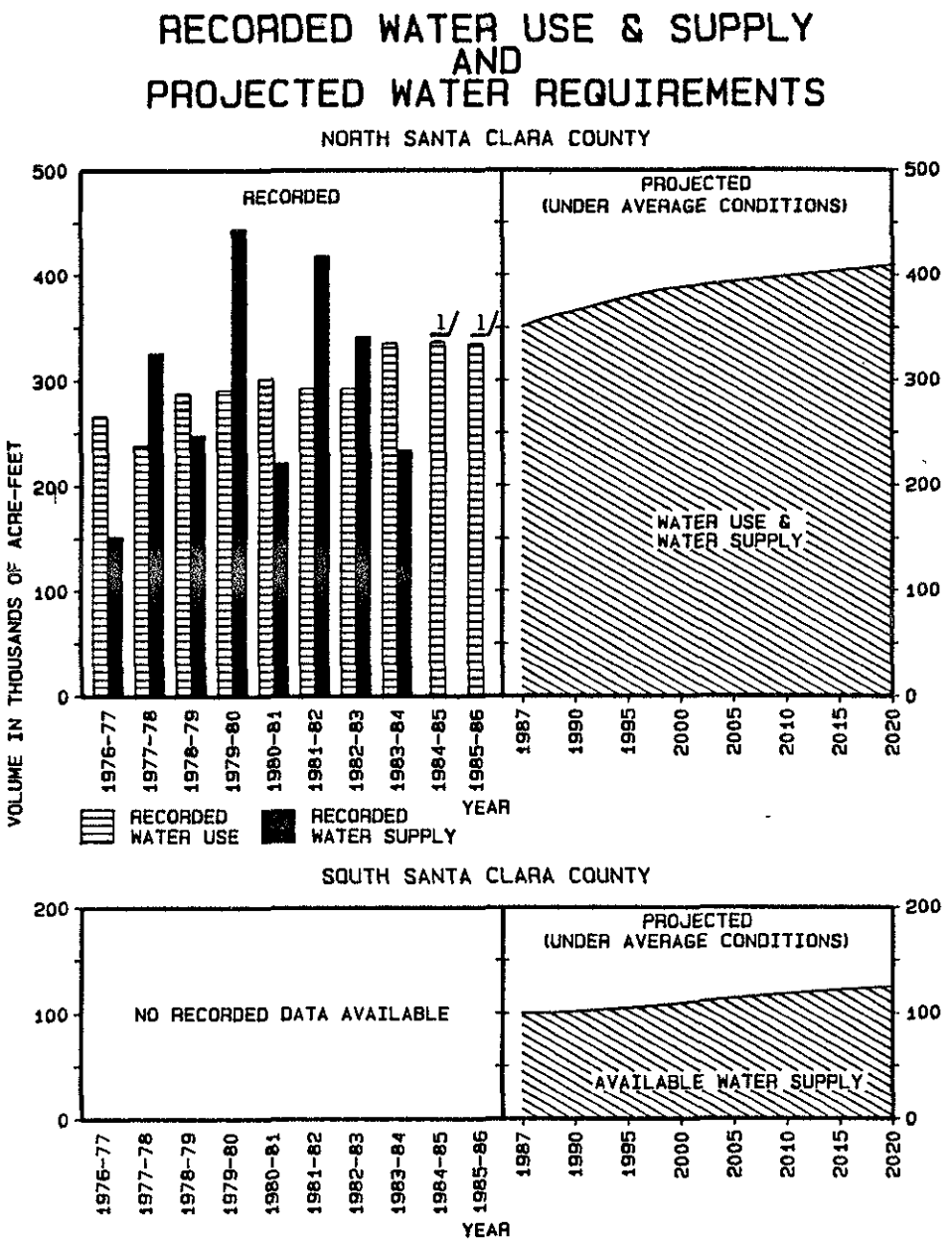
Water use in North Santa Clara County is predominantly municipal and industrial. The projections show an increase through 2020 when the total annual water use is estimated to be 410,000 acre-feet. Agricultural water use is expected to continue to decrease through 2020.

Water use in South Santa Clara County, the area south of Metcalf Road, has been primarily agricultural and has been met by available local supplies, mainly from groundwater pumping. In South Santa Clara County, it is anticipated that municipal and industrial water requirements will continue to increase while agricultural requirements will decrease. Total annual water use in South Santa Clara County is projected to increase to about 125,000 acre-feet by 2020.

Portions of Zone W-5 in South County have not had a formal groundwater production measurement program until fiscal year 1987-88. Thus, estimates of water use in South County have been primarily based on land use and can only be considered approximate.



# ...and Water Supply




1/ Some data necessary to determine 1984-85 and 1985-86 values are not yet available.

Present sources of water supply in North Santa Clara County consist of locally conserved water and water imported via Hetch Hetchy and South Bay Aqueducts. San Felipe water is scheduled to be available in June 1987. The recorded annual water supply and water use in North Santa Clara County since 1976-77 are shown to the left.

In 1985-86, local water supplies in the County were greater than average. During this period, water was added to surface reservoirs and the groundwater subbasins. The 1986-87 rainfall is below normal, but local and imported supplies will be sufficient to meet water needs during 1987-88.

# In-County Water Distribution System...

In 1975, the District published its Master Plan describing projects required to meet projected water needs in Santa Clara County through the year 2020. That construction program has been recently updated to meet changing conditions. The major facilities currently under construction are Santa Teresa Water Treatment Plant, Santa Teresa Force Main, Santa Teresa Tunnel, Greystone Pipeline, Greystone Pump Station, and Snell Pipeline. The facilities proposed to be constructed between now and 1990 are Calero Pipeline, Milpitas Pipeline, and Mountain View Distributary. Rinconada and Penitencia Sludge Handling Systems and acquisition of a Disposal Site are also planned to be completed before 1990. Rinconada and Penitencia Water Treatment Plant THM modifications, Rinconada Water Treatment Plant Expansion, West Reservoir and Delivery Main, West Pipeline Extension, Parallel West Pipeline, Parallel East Pipeline, and East Reservoir and Delivery Main are scheduled for 1990-93.

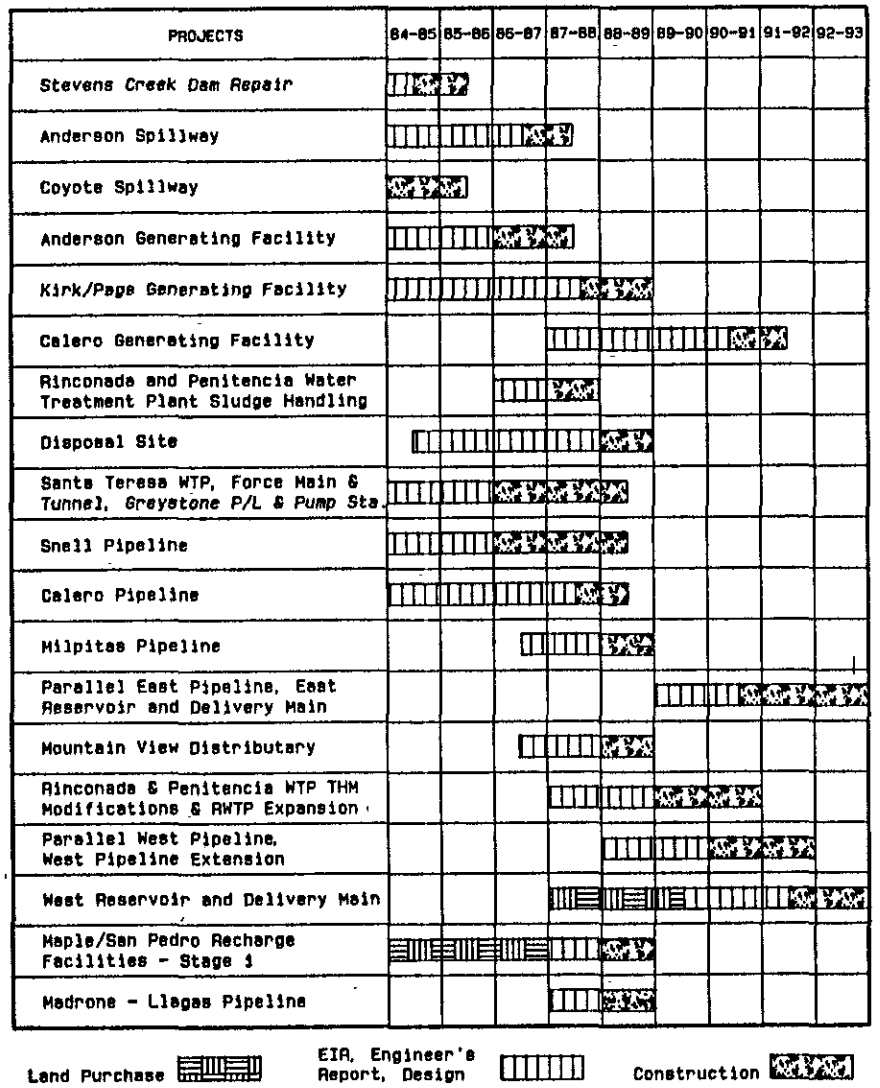
The 1983 master plan report for South Santa Clara County recommended a groundwater recharge and extraction system for meeting projected supplemental South County water needs. Purchase of land, initiated in 1983-84, will be complete in 1987-88. Maple Avenue and San Pedro Stage I Recharge Facility and the Madrone-Llagas Pipeline are currently scheduled for construction in 1988-89.

Anderson Dam hydroelectric power generation facility is under construction while design is progressing on a hydroelectric power generation facility at the Kirk and Page Turnouts from the Central Pipeline. A Calero generating facility is scheduled for construction in 1991.

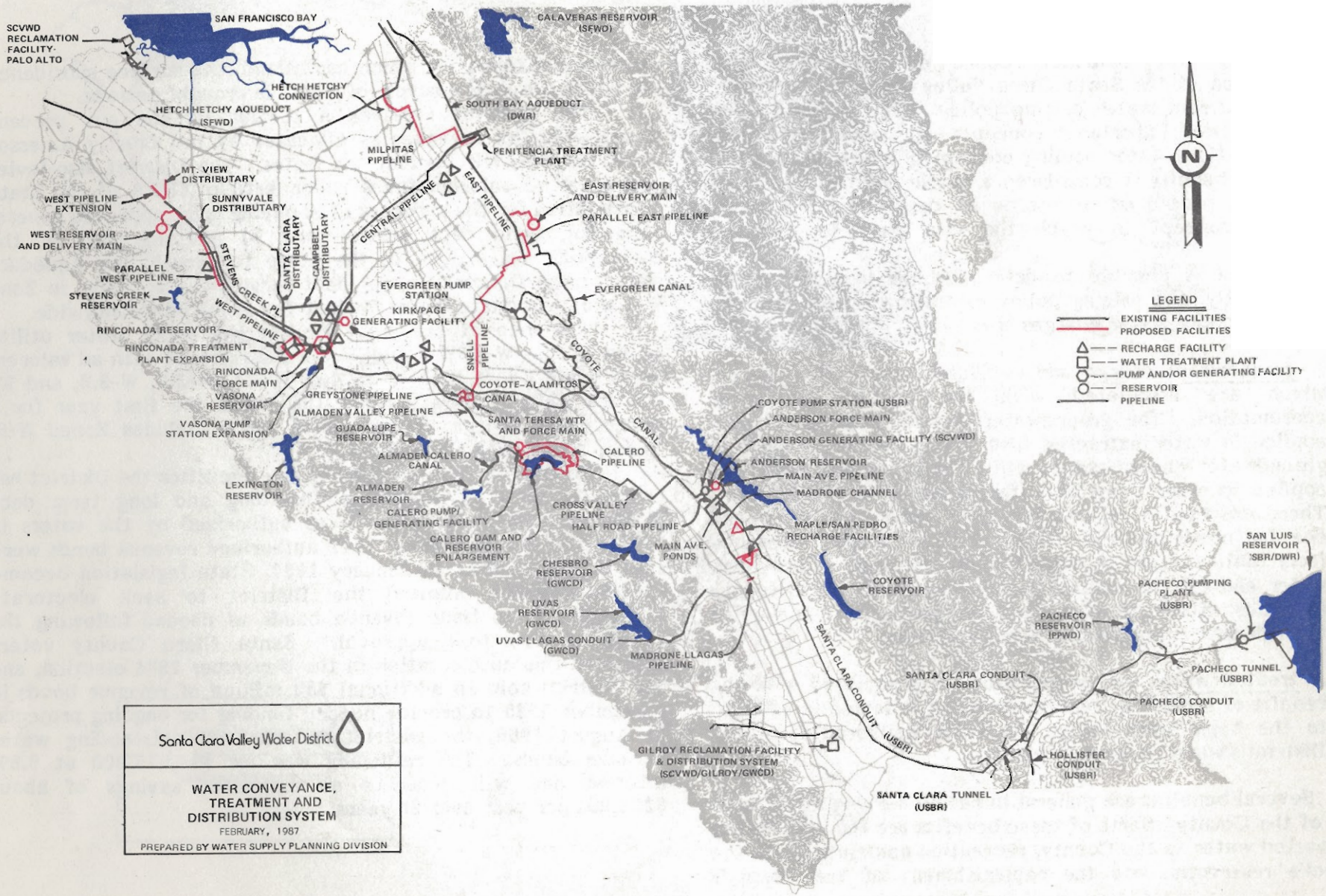
The District has been under a mandate from the State Division of Safety of Dams to reinforce Stevens Creek Dam, replace the Coyote Spillway, and increase the spillway capacity of Anderson Dam. The modifications to Stevens Creek Dam and replacement of the Coyote Spillway are complete. Enlargement of the Anderson Spillway was started in the Spring of 1987.

The map on the following page shows the location of the District's major existing and proposed facilities.

PROJECTED NEW FACILITY CONSTRUCTION PROGRAM
FOR THE WATER UTILITY ENTERPRISE
1984-85 THROUGH 1992-93



# ...Improvement and Expansion



# Sources of Revenue...

In 1971 the District's Board of Directors, upon recommendation of the Santa Clara Valley Water Commission, adopted the current water pricing policy. This pricing policy incorporates two important concepts in water resources management: (1) a water pooling concept in which water for a given zone of benefit is considered a single commodity with a uniform value regardless of source or cost and (2) a water management concept in which the user pays for benefits received.

Where it is possible to determine the benefits a user receives directly, the pricing policy establishes water charges. The District's major water charges are:

- A groundwater charge and equivalent basic user charge, which are associated with the benefit of water consumption. The groundwater charge is an excise tax applied to water extracted from the groundwater basin in groundwater charge zones, while the basic user charge is applied to other types of water delivered by the District. There are two rates, one for agricultural (Ag) water and one for municipal and industrial (M&I) water. Revenue from these charges pays for the general costs of providing water and for the capital costs of constructing in-county facilities either through "pay as you go" financing or through debt repayment of bonds and loans.

- A treated water surcharge, which is associated with the benefit of receiving treated water. It is levied in addition to the basic user charge on water delivered from the District's water treatment plants.

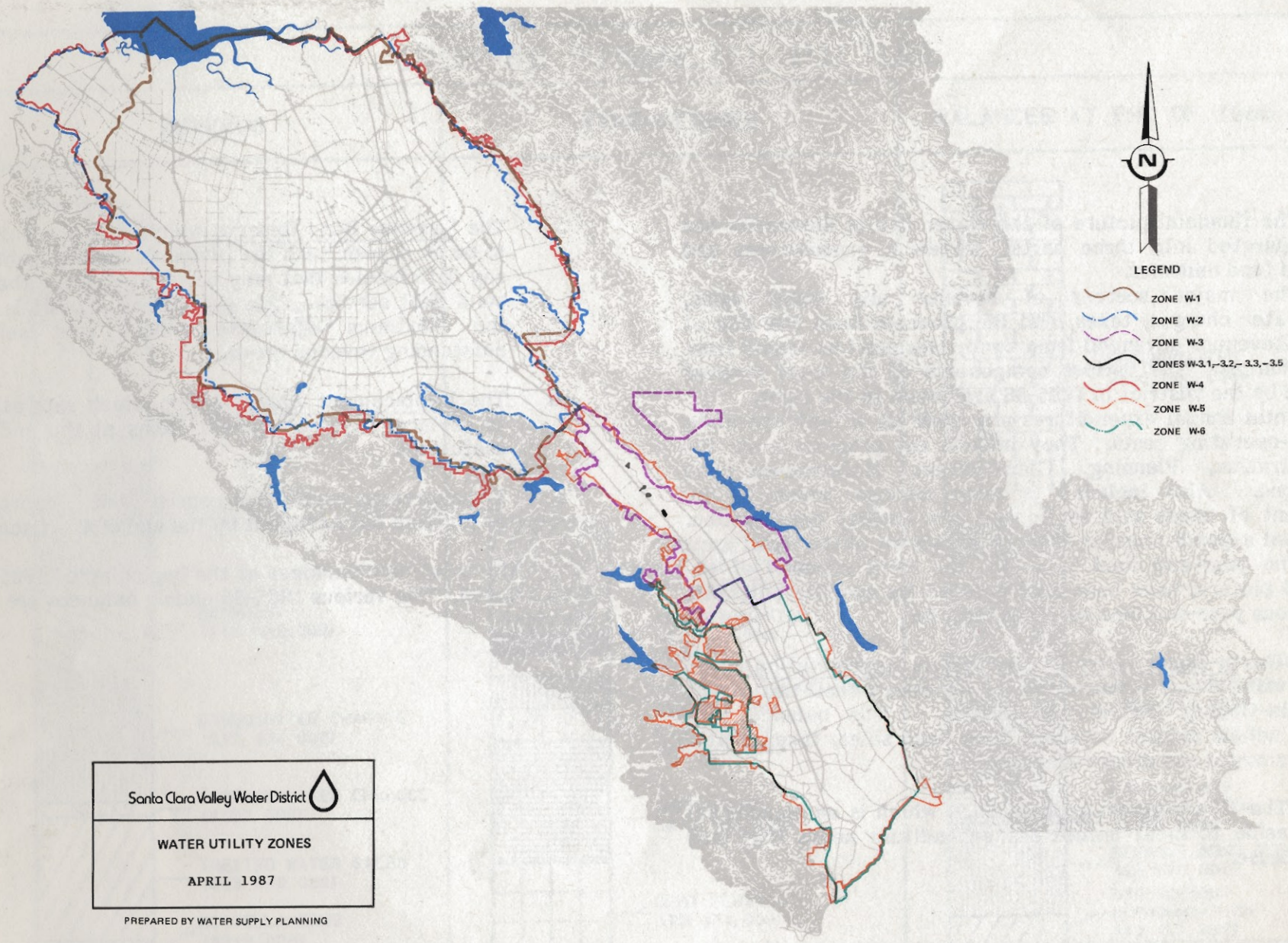
Several benefits are general in nature serving all or large areas of the County. Some of these benefits are the availability of imported water to the County, recreation associated with the District's reservoirs, and the replenishment of the County's groundwater subbasins which has halted land surface subsidence and which provides a supply of water in drought periods.

The District receives a portion of the one percent Countywide tax revenues as allocated by the County Assessor based on pre-1978 District tax levies. The District also levies additional ad valorem taxes under Article XIII A of the State Constitution for the purposes of a) paying prior approved general obligation bond debt service and b) meeting part of the contractual obligations to the State for South Bay Aqueduct water. The District's major debt service tax is levied in Zone W-1 while the State Water Project Tax is levied Countywide.

The map at the right locates the major water utility zones. Zones W-1, W-3 and W-4 are associated with ad valorem taxes while Zones W-2, W-5, W-6, W-3.1, W-3.2, W-3.3, and W-3.5 are water charge zones. 1987-88 is the first year for a groundwater charge in Zone W-5, which includes Zones W-6, W-3.1, W-3.2, W-3.3 and W-3.5.

To fund the construction of new facilities the District has relied on both pay-as-you-go financing and long term debt financing from revenue bonds as authorized by the voters in 1977. The last remaining 1977 authorized revenue bonds were sold in April 1984. In January 1984, State legislation became effective which allowed the District to seek electorate authorization to issue revenue bonds as needed following the Board of Directors' approval. Santa Clara County voters approved this authorization in the November 1984 election, and the District sold an additional $30 million of revenue bonds in November 1985 to provide needed funding for ongoing projects. In August 1986, the District refunded all outstanding water revenue bonds. The refunding was for $94,935,000 at 6.8% interest and will generate an estimated savings of about $200,000 per year over 20 years.

# . . . Related to Costs of Providing Benefits



# The Financial Picture...

The financial picture of the Water Utility Enterprise has been separated into three parts: revenue, expenditures and year-end fund balances.

The major sources of revenue are water sales, groundwater charges, taxes, and the proceeds from the sale of bonds. Revenues advanced from bond sales must be repaid from water charges. The various components of the total revenue received by the District in 1985-86 are shown to the right.

Total annual expenditures are made up of both operating and non-operating costs. They include the program costs for Administration, Planning, Construction, Maintenance and Operations. Also included is Debt Service which is the repayment of bonds sold to finance new facility construction. The actual expenditures for 1985-86 are shown to the right.

The year-end fund balances, the third element of the financial picture, have been appropriated for specific purposes. The various year-end fund balances include:

1. The In-County Distribution System Appropriation which will finance construction of necessary facilities of the In-County Distribution System. This balance may include monies received from bond sales, taxes, water charges and other revenues.

2. The Contingency Appropriation which is an amount set aside to meet unforeseen expenditure needs that may arise.

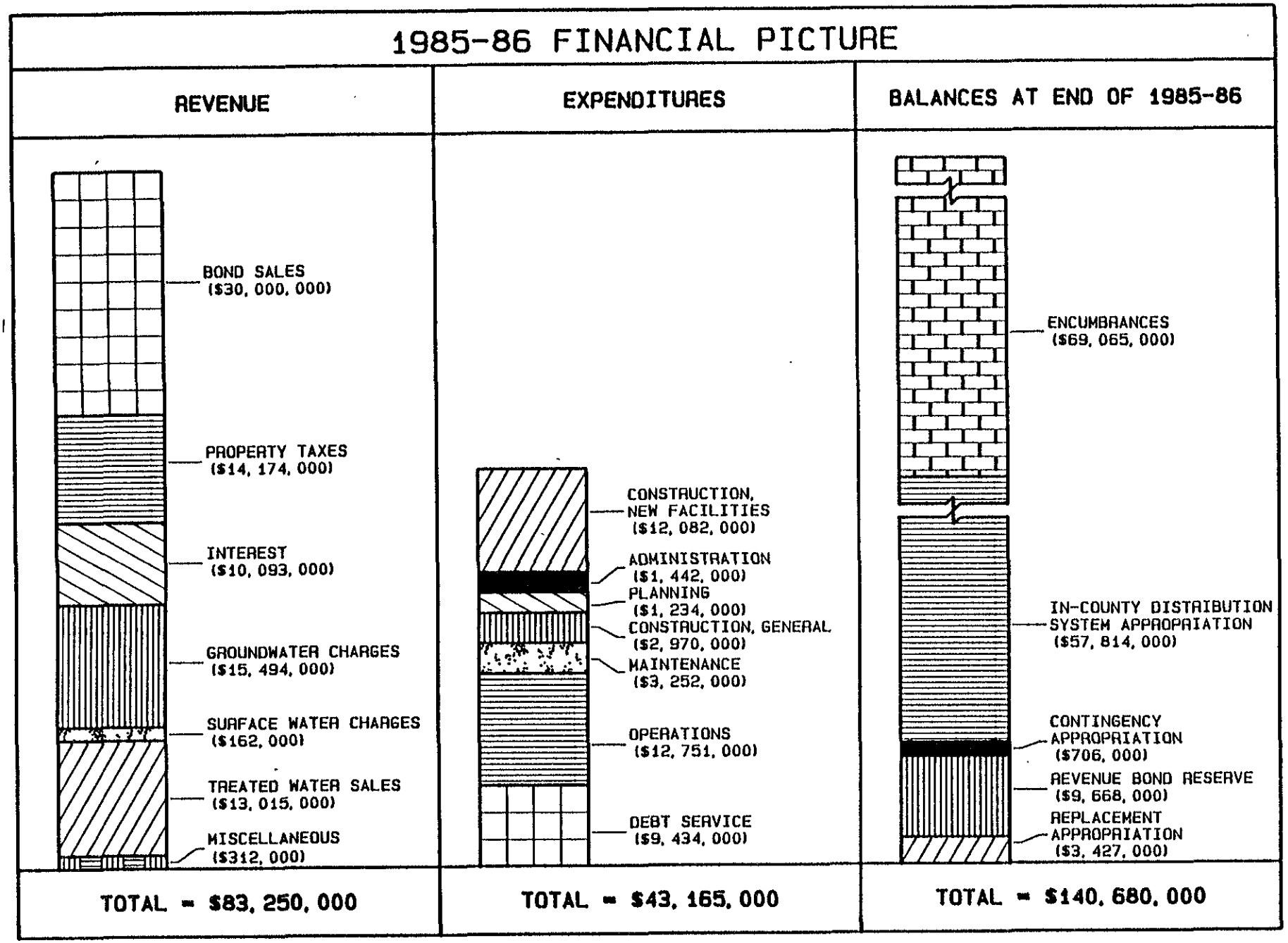
3. The Revenue Bond Reserve which is an amount required to be on deposit with the District's Fiscal Agent to meet any deficiencies that may occur in meeting the revenue bond debt service. The amount on deposit is equal to the maximum aggregate annual debt service on outstanding revenue bonds.

4. The Replacement Appropriation which sets aside funds to replace major equipment items at the end of their useful life.

5. Encumbrances which consist of appropriations committed but not spent by the end of the fiscal year.

The total fund balances at the beginning of 1985-86 were $100,595,000. The various 1985-86 ending balances are shown to the right.

# ...of the Water Utility Enterprise (1985-86)



# Financial Estimates...

Revenue, expenditures and year-end balances for the 1986-87 fiscal year as estimated in February 1987 are shown in the graph on the opposite page.

Revenue from groundwater charges and raw surface water sales is collected semiannually in the month following the 6 month period in which the water was used. Therefore, the 1986-87 revenue projections incorporate the collection for groundwater extractions and raw surface water deliveries made in the latter half of 1985-86 based on groundwater charges and basic user rates of $90 per acre-foot for municipal and industrial (M&I) water and $22.50 per acre-foot for agricultural (Ag) water in Zones W-2, W-3.1, W-3.2, W-3.3 and W-3.5. The rates applicable to groundwater extractions and raw surface water deliveries made in the first half of 1986-87, which are due and payable in that year, are $95 per acre-foot for M&I water and $23.75 for Ag water in Zones W-2, W-3.1, W-3.2, W-3.3, and W-3.5.

The treated water sales revenue for 1986-87 is based on the basic user rate of $95 and the treated water surcharge rate of $85 for a combined rate of $180 per acre-foot.

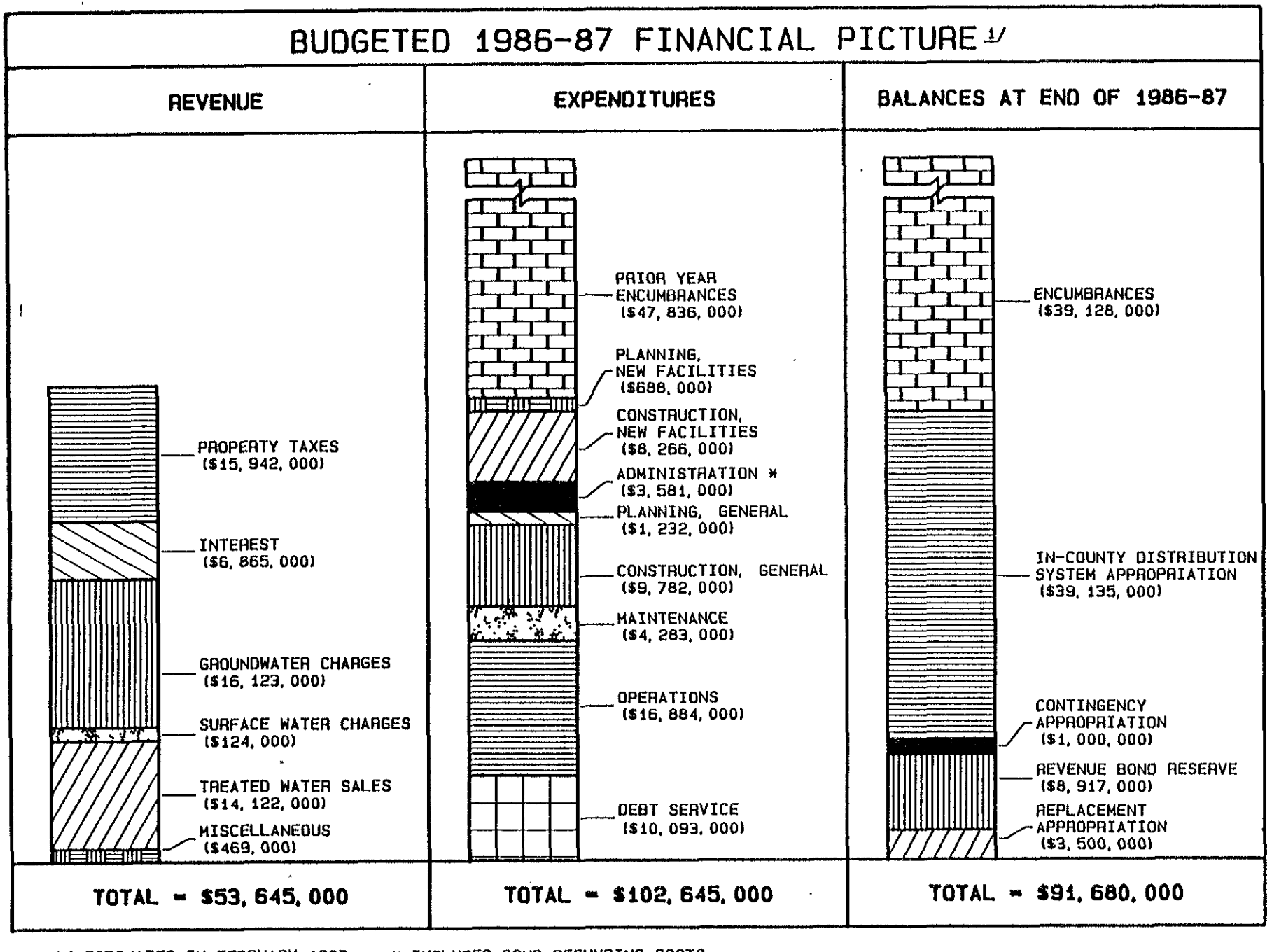
Estimated revenue from property taxes includes income from the one percent allocation ($4,936,000), from debt service taxes ($2,288,000), and from the State Water Project Tax ($8,718,000).

The estimated 1986-87 expenditures are as shown in the table on the opposite page. The expenditures are not the total contract amounts. Only the estimated dollars spent (cash outflow) during the year are shown in the table and discussed on this page as expenditures. The remaining contract amounts encumbered for future years expenditures are included in the year end balances.

The major expenditures for the year are Santa Teresa Water Treatment Plant, Santa Teresa Tunnel, Greystone Pipeline and Pump Station, and Santa Teresa Force Main land purchase and construction ($31,200,000), and Snell Pipeline Phase I construction ($10,711,000). Other major expenditures are Anderson Spillway design ($273,000), Snell Pipeline Phase II design and land purchase ($680,884), Calero Pipeline planning, design, and land purchase ($330,000), Anderson Generating Facility design and construction ($1,633,000), Milpitas Pipeline planning ($132,000), Mountain View Distributary planning ($113,000), Rinconada and Penitencia THM modification and Rinconada Expansion planning ($286,000), Maple-San Pedro Recharge land purchase ($261,000), design of the hydroelectric power generating facility on the Kirk and Page Turnouts from Central Pipeline ($178,000), and Well Sealing ($1,134,000).

The cost of imported water from the State Water Project is estimated at about $10,677,000 in 1986-87.

# • • • for the Current Year (1986-87)




1/ ESTIMATED IN FEBRUARY 1987 * INCLUDES BOND REFUNDING COSTS

# Financial Projections...

Revenue as projected in February 1987 for fiscal year 1987-88 is shown on the opposite page. The projected revenue is based on groundwater charges and basic user rates for groundwater extractions and raw surface water deliveries made in the latter half of 1986-87, which are due and payable in 1987-88, of $95 per acre-foot for M&I water and $23.75 per acre-foot for Ag water for Zones W-2, W-3.1, W-3.2, W-3.3, and W-3.5. The corresponding rates for groundwater extractions and raw surface water for the first half of 1987-88 and for treated water throughout the year are $100 per acre-foot for M&I water and $25 per acre-foot for Ag water for Zone W-2. The treated water surcharge rate for 1987-88 is $90 per acre-foot for a total treated water charge of $190 per acre-foot. The corresponding rates for groundwater extractions and raw surface water for the first half of 1987-88 are $22 per acre-foot for M&I water and $5.50 per acre-foot for Ag water for Zone W-5, which includes Zones W-6, W-3.1, W-3.2, W-3.3, and W-3.5.

The projected revenue from taxes includes the one percent allocation ($5,395,000), the debt service taxes ($2,140,000), and the State Water Project tax ($7,188,000).

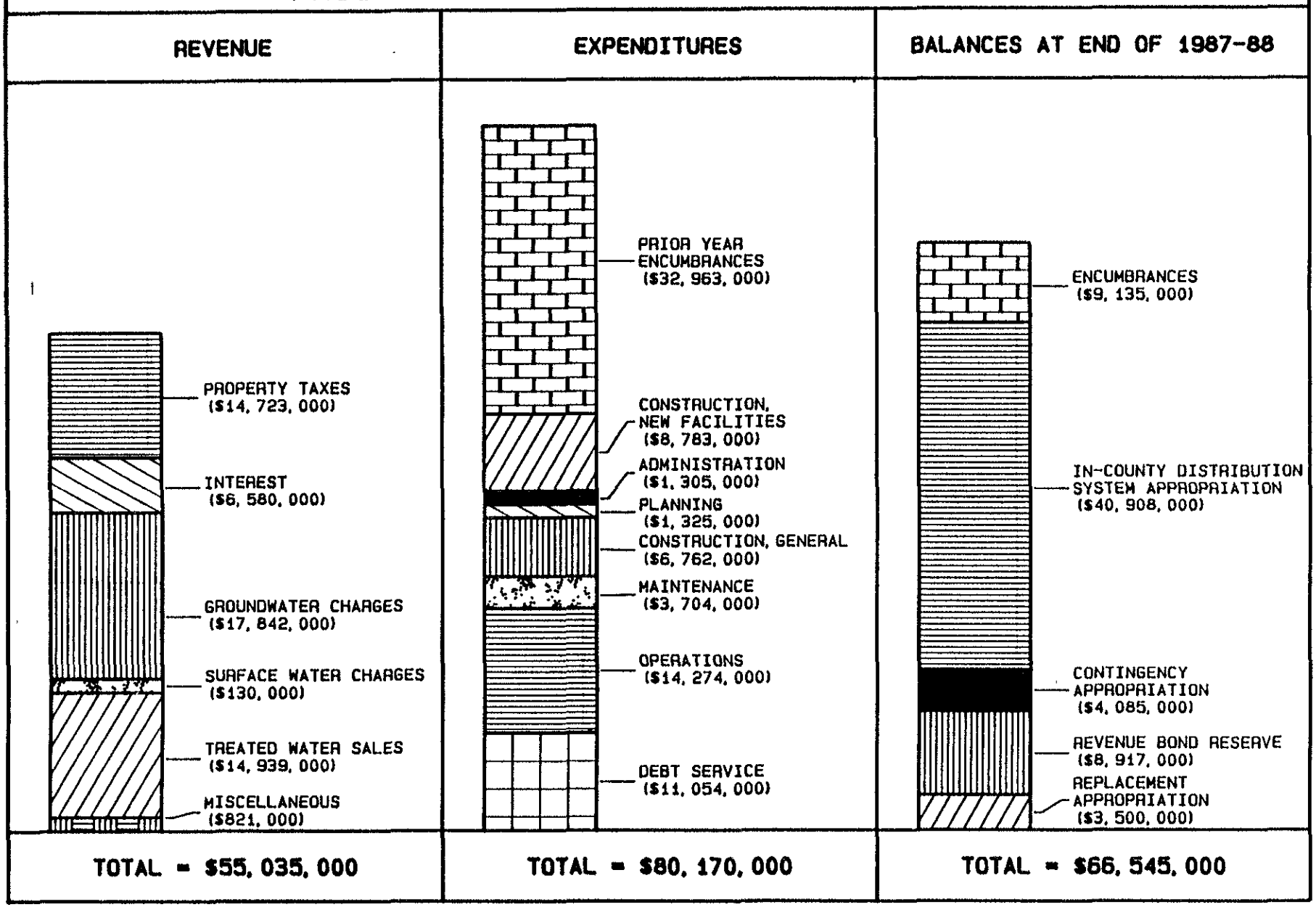
Projected expenditures for 1987-88 include costs to operate and maintain existing facilities, to purchase State Water Project and San Felipe water, and to design and build new facilities.

The projected 1987-88 expenditures shown on the opposite page and discussed on this page are estimated actual expenditures, not contract amounts. Estimated dollars remaining to fulfill contract obligations are shown as encumbrances at the end of 1987-88.

Major costs are Santa Teresa Water Treatment Plant, Santa Teresa Tunnel, Greystone Pipeline and Pump Station, and Santa Teresa Force Main construction ($13,036,000), Snell Pipeline Phase I and Phase II construction ($9,705,000), Calero Pipeline design and construction ($5,145,000), Anderson Spillway construction ($4,745,000), Rinconada and Penitencia Water Treatment Plant THM Modification and Rinconada Expansion planning and design ($1,070,000), Rinconada and Penitencia Sludge Handling design and construction ($2,400,000), West Reservoir and Delivery Main land purchase ($795,000), Anderson Generating Facility construction ($600,000), Milpitas Pipeline design and land purchase ($353,000), Maple-San Pedro Recharge facilities design ($493,000), Well Sealing ($223,000), Disposal Site planning ($167,000), and design and construction of the hydroelectric power generating facility on the Kirk and Page Turnouts from Central Pipeline ($719,000).

# . . . for the Next Fiscal Year (1987-88)

## PROJECTED 1987-88 FINANCIAL PICTURE 1/




1/ ESTIMATED IN FEBRUARY 1987

# Water Charges...

Groundwater charges and equivalent basic user rates to be levied in 1987-88 in Zone W-2 are summarized in Table I below. Groundwater charges and equivalent basic user rates to be levied in 1987-88 in Zone W-5 are summarized in Table II below. The Countywide ad valorem State Water Project Tax will be levied to generate $7,188,000.

TABLE I

GROUNDWATER CHARGES
AND BASIC USER RATES
IN ZONE W-2
FOR
FISCAL YEAR 1987-88

| | |
|---|---|
| Agricultural Water (Ag) | $25.00/Acre-Foot |
| Nonagricultural Water (M&I) | $100.00/Acre-Foot |

TABLE II

GROUNDWATER CHARGES
AND BASIC USER RATES
IN ZONE W-5
(INCLUDES ZONES W-6, W-3.1, W-3.2, W-3.3, AND W-3.5)
FOR
FISCAL YEAR 1987-88

| | |
|---|---|
| Agricultural Water (Ag) | $ 5.50/Acre-Foot |
| Nonagricultural Water (M&I) | $22.00/Acre-Foot |

WATER RATE COMPONENTS
AND WATER CHARGES
FOR FISCAL YEAR 1987-88

**Components**

| COMPONENT | RATE |
|---|---|
| Basic User, Zone W-2 | |
| Agricultural | $25.00/AF |
| Municipal and Industrial | 100.00/AF |
| Basic User, Zone W-5* | |
| Agricultural | 5.50/AF |
| Municipal and Industrial | 22.00/AF |
| Treated Water Surcharge | |
| Contract | 90.00/AF |
| Noncontract | 28.00/AF |
| Water Master | 9.50/AF |
| Capital Cost | |
| Half Road Lateral System | 2.75/AF |
| Power | |
| Half Road Lateral System | 4.00/AF |
| Evergreen System | 37.00/AF |

**Charges**

| TYPE OF CHARGE | AG WATER | M & I WATER |
|---|---|---|
| Groundwater | | |
| Zone W-2 | $25.00/AF | $100.00/AF |
| Zone W-5* | 5.50/AF | 22.00/AF |
| Surface Water | | |
| Evergreen Deliveries | 71.50/AF | 146.50/AF |
| Half Road Deliveries | 21.75/AF | 38.25/AF |
| Other Zone W-5 Deliveries* | 15.00/AF | 31.50/AF |
| Other Zone W-2 Deliveries | 34.50/AF | 109.50/AF |
| Minimum Charge - Zone W-5* | 23.00/YR | 23.00/YR |
| Minimum Charge - Zone W-2 | 70.00/YR | 70.00/YR |
| Stored Water | | |
| Zone W-2 | 25.00/AF | 100.00/AF |
| Zone W-5* | 5.50/AF | 22.00/AF |
| Treated Water | | |
| Contract | - | 190.00/AF |
| Noncontract | - | 128.00/AF |
| Reclaimed Water | | |
| Gilroy | 20.00/AF | 80.00/AF |

* Zone W-5 includes Zones W-6, W-3.1, W-3.2, W-3.3, and W-3.5.